

#### **4.0 Federal Networking Research is Needed: Industry Isn't Going to Do It**

Federal networking research is needed to enable the scenarios described in this report and to provide for the long-term growth and viability of the Internet. Industry is focused on developing the commercial technologies required for the near-term (one to three years) growth of the Internet. Industry is not focused on the research needed for scalability, management, and improved services in networking required for the expected long-term Internet growth. The trend is for industry to conduct even less networking research. Indeed, many industrial research facilities, including Lucent Laboratories and Xerox Parc, are slated to be shut down by their parent organizations.

Current commercial networking technologies are largely based on technologies developed under long-term research funded by Federal agencies. Without continuing Federal funding of basic research in new networking technologies, such as optical networking, scalable protocols, active networking, dynamic networking, and intelligent networking, the pipeline of basic networking technologies needed to support further expansion of the Internet economy and the scenarios described in this report will not be available.

The Federal agencies engaged in networking research have an impressive record of supporting basic networking research and transitioning the results of this research to the industrial sector. Many networking technologies and applications are developed, refined, and tested in Federally funded testbeds with the active participation of industrial partners, who often contribute equipment, labor, and other resources. This Federal/industry partnership leverages Federal research funding and provides direct commercial experience in the developing technologies, thereby hastening technology transfer. This partnership is expected to continue for the research identified in this report.